

## CLAIMS

1. A method for starting an internal combustion engine, said engine coupled with an electrical starter motor, said cranking motor coupled with an electrical battery, said method comprising:

5 (a) providing a capacitor that has insufficient charge to start the engine, said capacitor characterized by a capacitance greater than 320 farads and an internal resistance at 1 kHz and 20°C that is less than 0.008 ohms; then

10 (b) at a time when the battery has insufficient charge to start the engine, charging the capacitor with the battery; then

(c) starting the engine with power from the capacitor.

2. A method for starting an internal combustion engine, said engine coupled with an electrical starter motor, said cranking motor coupled with an electrical battery, said method comprising:

15 (a) providing a capacitor that has insufficient charge to start the engine, said capacitor characterized by a capacitance greater than 320 farads and an internal resistance at 1 kHz and 20°C that is less than 0.008 ohms; then

20 (b) at a time when the battery has insufficient charge to start the engine, connecting the capacitor with the battery; then

(c) charging the capacitor with the battery; and then

(d) starting the engine with the cranking motor while the capacitor is connected with the battery.

25 3. A method for starting one internal combustion engine, said engine coupled with a starter motor, said cranking motor coupled with an electrical battery, said method comprising:

30 (a) connecting a capacitor with an electrical system of another engine, said capacitor characterized by a capacitance greater than 320 farads and an internal resistance at 1 kHz and 20°C that is less than 0.008 ohms; then

(b) charging the capacitor with the electrical system of the other engine; then

(c) at a time when the battery has insufficient charge to start said one engine, connecting the capacitor with the cranking motor of said one engine; and then

(d) starting said one engine with the cranking motor and the capacitor.

4. The invention of Claim 1 or 2 or 3 wherein the capacitor is characterized by an internal resistance at 1 kHz and 20°C that is less than 0.006 ohms.

5. The invention of Claim 1 or 2 or 3 wherein the capacitor is characterized by an internal resistance at 1 kHz and 20°C that is less than 0.003 ohms.

6. A method for starting one internal combustion engine, said one engine coupled with a cranking motor, said cranking motor coupled with an electrical battery, said method comprising:

- 5 (a) connecting a capacitor with an electrical system of another engine while said capacitor is disconnected from said cranking motor coupled with said one engine; then
- (b) charging the capacitor with said electrical system of said another engine; then
- 10 (c) at a time when said electrical battery has insufficient charge to start said one engine, disconnecting said capacitor from said electrical system of said another engine and connecting said capacitor with said cranking motor coupled with said one engine; and then
- (d) starting said one engine with said cranking motor and said capacitor.
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7. The method of claim 6 wherein said capacitor is characterized by a capacitance greater than 320 farads.

20 8. The method of claim 7 wherein said capacitor is further characterized by an internal resistance at 1 kHz and 20°C that is less than about 0.008 ohms

25 9. The method of claim 7 wherein the capacitor is characterized by an internal resistance at 1 kHz and 20°C that is less than about 0.006 ohms.

10. The method of claim 7 wherein the capacitor is characterized by an internal resistance at 1 kHz and 20°C that is less than about 0.003 ohms.

30 11. The method of claim 6 wherein said capacitor is mounted on a cart, and further comprising moving said cart with said capacitor.



12. A method for starting an internal combustion engine, said engine coupled with a cranking motor, said cranking motor coupled with an electrical battery, said method comprising:

- 5 (a) charging a portable capacitor with a charging device powered by alternating current; then
- (b) at a time when the battery has insufficient charge to start said engine, temporarily connecting said capacitor with said cranking motor coupled with said engine; then
- 10 (d) starting said engine with said cranking motor and said capacitor; and then
- (e) disconnecting said capacitor from said cranking motor.

13. The method of claim 12 wherein said capacitor and said charging device are supported on a cart, and further comprising moving said  
15 cart with said capacitor and said charging device.

14. The method of claim 12 wherein said capacitor is characterized by a capacitance greater than 320 farads.

20 15. The method of claim 14 wherein said capacitor is further characterized by an internal resistance at 1 kHz and 20°C that is less than about 0.008 ohms

25 16. The method of claim 14 wherein the capacitor is characterized by an internal resistance at 1 kHz and 20°C that is less than about 0.006 ohms.

30 17. The method of claim 14 wherein the capacitor is characterized by an internal resistance at 1 kHz and 20°C that is less than about 0.003 ohms.

18. A portable rapid-delivery power supply apparatus for providing a supplementary source of power to an electrical system coupled to an internal combustion engine comprising:

5 a capacitor having connectors adapted to be connected to the electrical system; and

a charging device coupled to said capacitor, wherein said charging device is powered by alternating current.

10 19. The apparatus of claim 18 further comprising a cart, wherein said capacitor and said charging device are mounted on said cart.

20. The apparatus of claim 18 wherein said capacitor is characterized by a capacitance greater than 320 farads.

15 21. The apparatus of claim 20 wherein said capacitor is further characterized by an internal resistance at 1 kHz and 20°C that is less than about 0.008 ohms.

20 22. The apparatus of claim 18 wherein said connectors comprise a pair of cables.

23. A method for starting an internal combustion engine comprising:  
(a) providing said engine coupled with a cranking motor, said cranking motor coupled with a first electrical battery;

25 (b) charging a capacitor with a second electrical battery while said second electrical battery and said capacitor are disconnected from said cranking motor; then

(c) at a time when said first electrical battery has insufficient charge to start said engine, connecting said capacitor with said cranking motor  
30 coupled with said engine; then

(d) starting said engine with said cranking motor and said capacitor.  
and then

(e) disconnecting said capacitor from said cranking motor coupled with said engine.

24. The method of claim 23 further comprising disconnecting said  
5 capacitor from said second electrical battery prior to said starting said engine with said cranking motor and said capacitor.

25. The method of claim 24 further comprising disconnecting said  
10 capacitor from said second electrical battery prior to said connecting said capacitor with said cranking motor.